Exam. Code: 0908
Sub. Code: 33362

2056

B.E. (Biotechnology) Fourth Semester

BIO-411: Molecular Biology

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: ***Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Part.***

x-x-x

Q-1)

1) What are the advantages of performing liquid biopsy?
2) How can PCR be used in medical diagnosis?
3) What is the role of insulin signaling in type 2 diabetes?
4) What are intracellular receptors?
5) Give examples of first and second messengers.

(5x2=10)

PART A

Q-2)

1) How do prokaryotes reproduce? What is this process called?
2) What is the nuclear membrane? Which type of cell does it consist?

(5,5)

Q-3)

1) What is the role of the spliceosome in RNA processing?
2) What are ribozymes? Give an example of a ribozyme involved in RNA metabolism.

(5,5)

Q-4)

1) What does "wobble" refer to in terms of base pairing?
2) What are synonymous codons? Give one example.

(5,5)

P.T.O.

PART B

Q-5)

1) What are enhancers and silencers? How do they differ from promoters?
2) How do epigenetic changes differ from genetic mutations?

(5,5)

Q-6)

What are G-protein coupled receptors (GPCRs)? Give two examples of ligands that bind to them.

(10)

Q-7)

Write short notes on any 2 of the following:-

1) personalized medicine
2) DNA microarray technology
3) prenatal genetic diagnosis

(5,5)

x-x-x